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United States Patent

[19]

Saferstein et al.[11] **Patent Number:** **5,595,735**[45] **Date of Patent:** **Jan. 21, 1997**[54] **HEMOSTATIC THROMBIN PASTE
COMPOSITION**[75] Inventors: **Lowell Saferstein**, Edison; **Stephen J. Wolf**, Neshanic Station, both of N.J.[73] Assignee: **Johnson & Johnson Medical, Inc.**,
Arlington, Tex.[21] Appl. No.: **528,002**[22] Filed: **May 23, 1990**[51] Int. Cl.⁶ **A61K 38/48**; A61K 35/16;
C12N 9/74[52] U.S. Cl. **424/94.64**; 424/529; 424/530;
424/531; 435/214[58] Field of Search 435/214; 424/94.64,
424/529, 530, 531[56] **References Cited**

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[57] **ABSTRACT**

A hemostatic paste composition comprising a hemostatic effective amount of thrombin in a polyethylene glycol base which is preferably prepared by admixing an aqueous solution of thrombin and polyethylene glycol and freeze-drying the mixture to remove substantially all of the water to yield a viscous water soluble paste of fine particles of thrombin uniformly dispersed throughout the polyethylene glycol base, and methods of its use to provide hemostasis to a hemorrhaging site of a mammal.

20 Claims, No Drawings